

What is claimed is:

1. A method for analysis of a solid material, comprising:
 - (a) coring the solid material with a coring tool such that a plug is formed;
 - (b) extruding the plug of solid material;
 - (c) exposing the plug of solid material to radiation; and
 - (d) detecting scattered radiation.
2. The method for analysis of a solid material of claim 1, further comprising compressing said solid material after said plug is formed.
3. The method for analysis of a solid material of claim 2, wherein a mallet and a pin are used to compress said solid material.
4. The method for analysis of a solid material of claim 1, further comprising loading said coring tool onto a rack after said solid material is extruded.
5. The method for analysis of a solid material of claim 4, wherein said rack comprises a top plate with one or more holes.
6. The method for analysis of a solid material of claim 5, wherein:
 - (a) said rack further comprises side walls and a bottom plate;
 - (b) said top plate is composed of a material that absorbs x-ray radiation; or
 - (c) said top plate is composed of PVC or CPVC.
7. The method for analysis of a solid material of claim 1, wherein a pin is used to extrude said plug of solid material.
8. The method for analysis of a solid material of claim 7, wherein a micrometer is used to adjust the position of said pin.
9. The method for analysis of a solid material of claim 4, wherein said rack further comprises a lifting plate.

10. The method for analysis of a solid material of claim 1, wherein:
 - (a) said radiation is x-ray radiation; or
 - (b) said radiation is infrared radiation.
11. The method for analysis of a solid material of claim 10, wherein said x-ray radiation is emitted with an angle of incidence less than or equal to:
 - (a) 2.50 degrees;
 - (b) 2.25 degrees;
 - (c) 2.00 degrees;
 - (d) 1.75 degrees;
 - (e) 1.50 degrees;
 - (f) 1.25 degrees;
 - (g) 1.00 degrees;
 - (h) 0.75 degrees; or
 - (i) 0.50 degrees.
12. A method for the analysis of a plurality of solid samples, comprising:
 - (a) coring each solid sample with a coring tool such that each solid sample forms a plug;
 - (b) extruding each plug of solid material;
 - (c) exposing each plug of solid material to radiation; and
 - (d) detecting scattered radiation.
13. The method for the analysis of a plurality of solid samples of claim 12, wherein a pin bed is used to remove the rods from the needles of said coring tools.
14. A system for analyzing a solid material, comprising:
 - (a) a coring tool comprising a means for extruding a plug of solid material;
 - (b) a means for exposing the plug of solid material to radiation; and
 - (c) a means for detecting scattered radiation.
15. The system for analyzing a solid material of claim 14, further comprising a means for compressing said solid material.

16. The system for analyzing a solid material of claim 15, wherein said means for compressing said solid material is a mallet and a pin.
17. The system for analyzing a solid material of claim 14, further comprising a rack.
18. The system for analyzing a solid material of claim 17, wherein said rack comprises a top plate with one or more holes.
19. The system for analyzing a solid material of claim 18, wherein:
 - (a) said rack further comprises side walls and a bottom plate;
 - (b) said top plate is composed of a material that absorbs x-ray radiation; or
 - (c) said top plate is composed of PVC or CPVC.
20. The system for analyzing a solid material of claim 14, wherein said means for extruding a plug of solid material is a pin.
21. The system for analyzing a solid material of claim 20, wherein the position of said pin is adjusted using a micrometer.
22. The system for analyzing a solid material of claim 17, wherein said rack further comprises a lifting plate.
23. The system for analyzing a solid material of claim 14, wherein:
 - (a) said radiation is x-ray radiation; or
 - (b) said radiation is infrared radiation.
24. The system for analyzing a solid material of claim 23, wherein the x-ray radiation is emitted with an angle of incidence less than or equal to:
 - (a) 2.50 degrees;
 - (b) 2.25 degrees;
 - (c) 2.00 degrees;
 - (d) 1.75 degrees;
 - (e) 1.50 degrees;

- (f) 1.25 degrees;
 - (g) 1.00 degrees;
 - (h) 0.75 degrees; or
 - (i) 0.50 degrees.
25. A system for analyzing a plurality of solid samples, comprising:
- (a) a plurality of coring tools, each comprising a means for extruding a plug of solid;
 - (b) a means for exposing the plugs of solid to radiation; and
 - (c) a means for detecting scattered radiation.
26. The system for analyzing a plurality of solid samples of claim 25, wherein a pin bed is used to remove the rods from the needles of said coring tools.